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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,317	04/20/2004	Hidekazu Moriyama	119294	2578

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EXAMINER

LIN, JAMES

ART UNIT PAPER NUMBER

1762

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No. 10/827,317	Applicant(s) MORIYAMA, HIDEKAZU	
	Examiner Jimmy Lin	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/17/2007 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support for "forming banks corresponding to the film pattern on the substrate" in any particular order. Fig. 1 shows the order of the cleaning steps, but never mentions the order of forming the banks. For the purpose of this examination, it will be interpreted that the banks can be formed in any order.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita et al. (U.S. Publication 2001/0001050) in view of Igari et al. (JP 10-337882, as provided by the Applicant) and Watanabe et al. (U.S. Patent 4,966,480).

Miyashita discloses a method of forming an electroluminescent (EL) film pattern by an ink-jet printing method (abstract). The ink-jet printer has a liquid droplet ejection head 110. Banks 105 are formed on the substrate according to the film pattern and functional liquid is disposed into the space between the banks (Fig. 1).

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Miyashita does not explicitly ^{teach} that a conduit is attached to the ink-jet head, but a conduit must necessarily be connected to the head in order to supply the functional liquid because Miyashita teaches that a hole 27 in the ink-jet head is used to supply the liquid ([0086]; Fig. 10).

Miyashita does not explicitly teach filling the passage with various solvents.

Igari teaches a method of cleaning an ink-jet printing apparatus. When the ink-jet is not being used, the solvent in functional liquid will evaporate, causing the nozzle to become clogged (abstract, [0004]). During the cleaning step, solvent 42 in the solvent container 38 is supplied to the conduit 23b and the ink-jet head ([0024]; Fig. 1). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of invention to have filled the conduit and ink-jet head of Miyashita with cleaning solvents. One would have been motivated to do so in order to have prevented the nozzle from clogging.

Miyashita and Igari do not teach cleaning with purified water, a solvent dissolving both a solvent contained in the functional solution and the purified water, and the solvent contained in the functional solution.

Watanabe teaches a method of cleaning a nozzle assembly, wherein the cleaning solvent can be the solvent contained in the functional solution (col. 4, line 61-col. 5, line 2). Accordingly, Miyashita teaches the deposition of a precursor of PPV using the ink-jet method. The solvent can be water or organic solvent [0050],[0070]. To have used water as the cleaning solvent would have been an obvious modification in light of Watanabe. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used one of the water as the particular cleaning solvent with a reasonable expectation of success because Watanabe teaches that the cleaning solvent can be the solvent used in the functional solution and because Miyashita teaches that water is suitable for ink-jet deposition of the precursor.

Miyashita does not explicitly teach that the water is purified. However, purified water would have prevented the contamination of the EL layer. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used purified water as opposed to unpurified water in the method of forming the EL layer of Miyashita with a reasonable expectation of success. One would have been motivated to do so in order to have prevented possible defects of the EL layer because it is well known that EL layers are sensitive to contaminants. In addition, the mere purity of a product, by itself, does not render the product unobvious (see MPEP 2144.04.VII.). It would have been obvious to one of ordinary skill in the art at the time of invention to have used purified water as opposed to unpurified water because the purity of water is unobvious.

Miyashita, Igari, and Watanabe do not explicitly teach that the cleaning process can be performed at least three times with water. However, cleaning the conduit and ink-jet head multiple times would ensure that all the functional solution is removed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have performed the cleaning process with water at least three times with a reasonable expectation of success. One would have been motivated to do so in order to have further prevent the clogging of the nozzle. As to the solubility of the different solvents as required by the claim, water is soluble in itself.

As to the order of filling the passage with functional solution and disposing it between the banks, a deposition step will eventually follow the cleaning process.

Claim 4: Miyashita teaches that the precursor is conjugated by heating [0052] and the resulting polymer layer has electrical conductivity [0064]-[0065].

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyashita '050 in view of Igari '882 and Watanabe '480 as applied to claim 1 above, and in further view of Ozaki et al. (JP 60-139454).

Miyashita, Igari, and Watanabe are discussed above, but do not explicitly teach that a storage solution is used in the ink-jet head.

Ozaki teaches that it is well known to use a storage solution in an ink-jet head to prevent clogging (abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a storage liquid in the ink-jet head of Miyashita between

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operations. One would have been motivated to do so in order to have further prevented clogging of the nozzle.

Miyashita and Yano do not explicitly teach the cleaning process is used on the ink-jet head when the head is filled with the storage solution. However, Ozaki teaches that the storage solution is an aqueous ethylene glycol solution, but Miyashita never teaches that such a solution is a suitable solvent used for depositing EL materials. In other words, ethylene glycol would be an unwanted compound in the EL layer. Because EL layers are well known to be sensitive to contaminants (i.e., unwanted compounds), it would have been obvious to one of ordinary skill in the art at the time of invention to have performed the cleaning process between the use of a storage solution in the ink-jet head and the deposition of the EL materials of Miyashita.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1- 5 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 6, 11, and 12 of copending Application No. 10/827,426 in view of Miyashita. Claim 6 of '426 does not require any particular order of steps. However, the selection of any order of performing process steps is *prima facie* obvious in the

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absence of new or unexpected results (see MPEP 2144.04.II.C.). Accordingly it would have been obvious to one of ordinary skill in the art at the time of invention to have performed the steps of '426 in the claimed order with a reasonable expectation of success because the Applicant has not shown any criticality for performing such an order of steps.

This is a provisional obviousness-type double patenting rejection.

Response to Arguments

9. Applicant's arguments filed 12/20/2006 have been fully considered but they are not persuasive.


The Applicant argues on pg. 6 that the Office Action fails to allege that one of ordinary skill in the art would have combined the disclosures of the applied references to perform the steps in the recited order of the currently amended claims 1-2. However, such is obvious as discussed above.

The Applicant's argument on pg. 6 that it would not have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Kiguchi by adding the cleaning steps from three separate references (Shibata, Edgett, and Watanabe) are moot because the current rejections no longer rely on Shibata and Edgett.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KEITH HENDRICKS
PRIMARY EXAMINER